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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/720,392

11/25/2003

Il Rog Heo

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07/16/2007

KED & ASSOCIATES, LLP

P.O. Box 221200

Chantilly, VA 20153-1200

EXAMINER

KURTZ, BENJAMIN M

ART UNIT

PAPER NUMBER

1723

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/720,392	Applicant(s) HEO, IL ROG	
	Examiner Benjamin Kurtz	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 6-8, 10-13 and 31-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoo KR 1994-0006388.

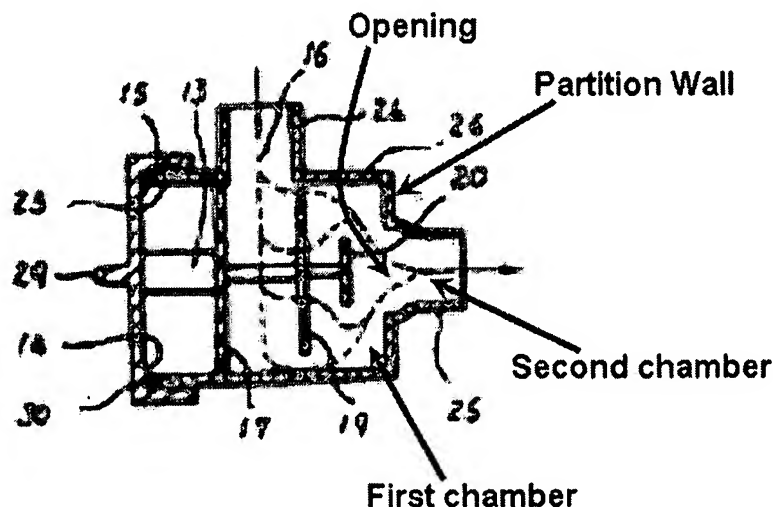
Regarding claim 6, Yoo teaches a filter assembly for a washing machine, comprising: a filter case comprising: an inlet (24) and an outlet (25) on a circumference and an opening inside, and a filter loaded in the filter case, the filter comprising: a cap (11) fitted to the filter case, a shaft (18) extending from a bottom of the cap and an extension (19) comprising a continuous solid walled structure extending from a distal end of the shaft, wherein the extension is disposed to confront the opening so as to filter particles in water passing through the filter case, the extension having a protrusion (20) protruding from a side of the extension opposite the cap (fig. 4 and 5).

Regarding claims 7-8, 10-13, 31 and 32, Yoo further teaches a circumferential cross-section of the protrusion is a closed curve (fig. 4); the protrusion has a ring type circumferential cross-section (fig. 4); a diameter of an end portion of the extension is equal to or greater than a diameter of the opening (fig. 5); the filter case is cylindrical (fig. 4); the inlet is provided to the circumference of the filter case in a tangential direction (fig. 4 and 5); the filter comprises a tube having an inlet and outlet on the

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circumference, a partition wall provided in the tube to partition an internal space of the tube into first and second chambers communicating with the inlet and outlet and the opening perforating the partition wall (see figure on next page); the protrusion extends from the extension in a direction opposite the cap (fig. 4 and 5); a largest diameter portion of the extension surrounds the protrusion (fig. 4 and 5).

Regarding claim 37, Yoo further teaches the extension filters particles from water flowing between an outer peripheral edge of the extension and an inner surface of the filter case (fig. 5).

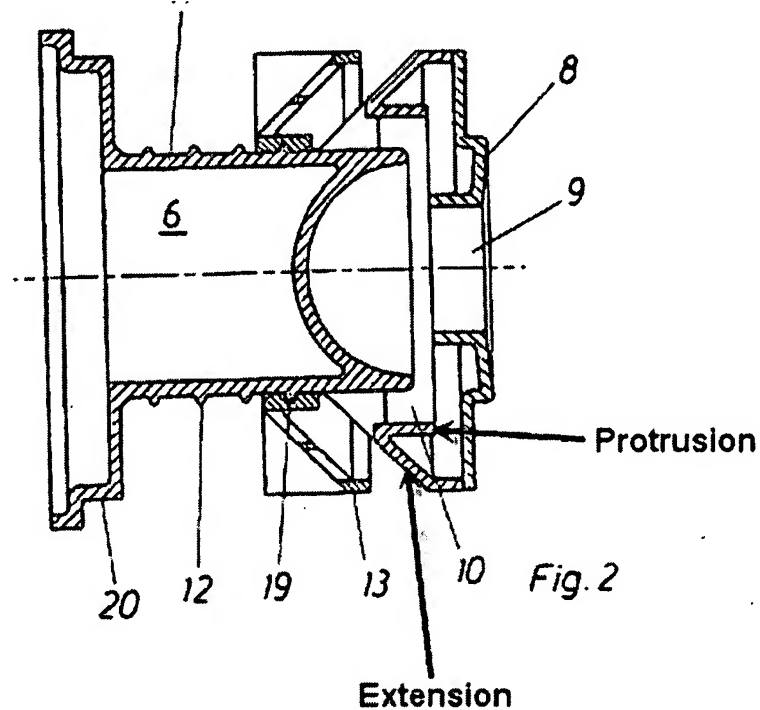


2. Claims 1-13, and 22-32, 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Beier et al. DE 39 22 629 A1.

Regarding claim 1, Beier teaches a filter for a washing machine comprising: a cap (20) fitted to a filter case having an opening via which water passes, a shaft (11) extending from a bottom of the cap, and a funnel shaped extension extending from an end of the shaft, the extension disposed to confront the opening to the filter particles

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from water flowing between the extension and the filter case, the extension having a protrusion protruding from a side of the extension opposite to the cap wherein the protrusion extends away from the cap and has a diameter that is smaller than a largest diameter portion of the extension (fig. 2 and figure on next page).



Regarding claim 2-5, 29 and 30, Beier further teaches a circumferential cross section of the protrusion is a closed curve (fig. 1); the protrusion has a ring type circumferential cross-section (fig. 1); a diameter of the funnel shaped extension increases in a direction extending away from the cap (fig. 1); a diameter of an end portion of the extension is greater than a diameter of the opening (fig. 1); the extension comprises a solid surface (fig. 1) (the limitation of the water passing through the opening and moving around outside edges of the extension is a process step of the

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operation of the apparatus and does not add a structural limitation); and external edges of the extension and the protrusion form concentric circles (fig. 1).

Regarding claims 35 and 36, Beier further teaches the protrusion extends directly from an interior surface of the funnel shaped extension (fig. above); and the extension comprises a continuous solid walled structure that extends from a distal end of the shaft (fig. 1).

Regarding claims 6 and 9, Beier teaches a filter assembly for a washing machine comprising: a filter case (1) having an inlet (4) and an outlet (5) on a circumference, and an opening inside and a filter loaded in the filter case the filter comprising: a cap (20) fitted to the filter case, a shaft (11) extending from a bottom of the cap, and a funnel shaped solid walled extension comprising a continuous solid walled structure extending from a distal end of the shaft, wherein the extension is disposed to confront the opening so as to the filter particles in water passing through the filter case, the extension having a protrusion protruding from a side of the extension opposite to the cap (fig. 1 and figure above).

Regarding claims 7, 8, 10-13, 31 and 32, Beier further teaches a circumferential cross-section of the protrusion is a closed curve (fig. 2); the protrusion has a ring type circumferential cross-section (fig. 2); a diameter of an end portion of the extension is greater than a diameter of the opening (fig. 1); the filter case is cylindrical (fig. 1); the inlet is provided to a circumference of the filter case in a tangential direction (fig. 1); the filter comprises a tube (1) having the inlet and the outlet on the circumference, a partition wall provided in the tube to partition an internal space of the tube into first and

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second chambers communicating with the inlet and the outlet respectively, and the opening perforating the partition wall (fig. 1); the protrusion extends from the extension in a direction opposite the cap (fig. 2); and a largest diameter portion of the extension surrounds the protrusion (fig. 2).

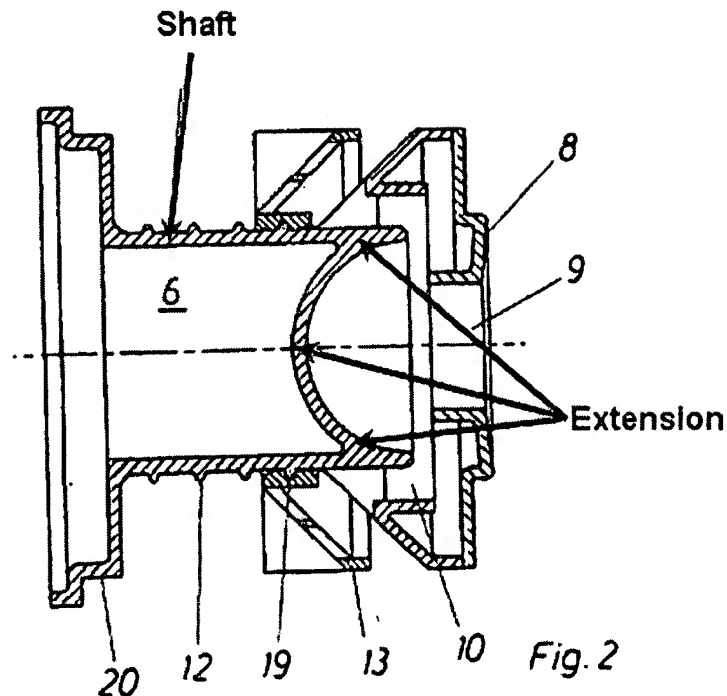
Regarding claim 38, Beier further teaches the protrusion extends directly from an inner circumferential surface of the funnel figure of the extension (fig. 2).

Regarding claim 22, Beier teaches a filter for a washing machine comprising: a filter case (1) having a filter chamber with an opening (9), a filter element mounted in the filter chamber, the filter element comprises: a cap (20), a shaft (11), and an extension formed on an end of the shaft opposite the cap, the extension comprises a generally conical shaped solid surface having a diameter that increases in a direction extending away from the cap, and wherein the largest diameter portion of the extension is positioned immediately adjacent the opening (9) (see figure above).

Regarding claims 24-28, a largest diameter portion of the extension has a diameter that is greater than a diameter of the opening in the case; the filter element further comprises a protrusion formed on a side of the extension opposite the cap and wherein the protrusion extends from the extension in a direction opposite the cap; the protrusion has a circular profile with a diameter that is smaller than the largest diameter portion of the extension; the protrusion is surrounded by the largest diameter portion of the extension; and the largest diameter portion of the extension has a diameter that is larger than a diameter of the opening in the case and wherein a diameter of the protrusion is smaller than the diameter of the opening (see figure above).

Regarding claims 41 and 42, Beier further teaches the extension comprises a continuous solid walled structure that extends from a distal end of the shaft (fig. 2); and the extension filters particles from water flowing between an outer peripheral edge of the extension and an inner surface of the filter case (fig. 1).

Regarding claims 22, 23 and 43, Beier teaches a filter for a washing machine comprising: a filter case (1) having a filter chamber with an opening (9), a filter element mounted in the filter chamber, the filter element comprises: a cap (20), a shaft (11), and an extension formed on an end of the shaft opposite the cap (see figure below), the extension comprises a generally conical shaped solid surface having a diameter that increases in a direction extending away from the cap, and wherein the largest diameter portion of the extension is positioned immediately adjacent the opening (9) (fig. 1), wherein the solid surface of the extension is configured to force all water escaping from the filter chamber through the opening to pass around exterior edges of the largest diameter portion of the extension, and a gap is formed between an outer peripheral edge of the largest diameter portion of the extension and a wall of the filter case such that water from the filter chamber flows into the opening through the gap (fig. 1).



Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 14-16, 18-21 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoo (388) in view of Lee US 6 167 733.

Regarding claim 14, Yoo teaches a washing machine comprising a cabinet (1) a drum (27) and a filter assembly provided in a cabinet comprising: a filter case comprising: an inlet (24) and an outlet (25) on a circumference and an opening inside to make the inlet and outlet communicate with each other, and a filter loaded in the filter

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case, the filter comprising: a cap (12) fitted to the filter case, a shaft (18) extending from a bottom of the cap, and an extension (19) comprising a continuous solid walled structure extending from a distal end of the shaft, the extension disposed to confront the opening to filter particles in water passing through the filter case, the extension having a protrusion (20) protruding from a side of the extension opposite the cap (fig. 4 and 5).

Yoo does not teach a tube provided in the cabinet, a drum rotatably installed in the tub and a filter assembly provided in the cabinet to filter water discharged from the tub. Lee teaches a washing machine with a cabinet, a tub provided in the cabinet, a drum rotatably installed in the tub and a filter assembly provided in the cabinet to filter water discharged from the tub (col. 1, lines 24-30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the filter of Yoo and the washing machine of Lee in order to remove impurities contained in the liquid discharged from the tub (col. 1, lines 54-56 Lee).

Regarding claims 15-16, 18-21 and 33 Yoo further teaches the circumferential cross-section of the protrusion is a closed curve (fig. 4); the protrusion has a ring type circumferential cross-section (fig. 4); a diameter of an end portion of the extension is equal to or greater than a diameter of the opening (fig. 5); the filter case is cylindrical (fig. 4); the inlet is provided to the circumference of the filter case in a tangential direction (fig. 4 and 5); the filter case comprises a tube having an inlet and outlet on the circumference, a partition wall provided in the tube to partition an internal space of the tube into first and second chambers communicating with the inlet and outlet and the

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opening perforating the partition wall (see figure above); and the protrusion extends from the extension in a direction opposite the cap (fig. 5).

Regarding claim 39, Yoo further teaches the extension filters particles from water flowing between an outer peripheral edge of the extension and an inner surface of the filter case (fig. 5).

4. Claims 14-21, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beier (629) in view of Lee (733).

Regarding claim 14, Beier teaches a washing machine with a filter assembly comprising: a filter case (1) having an inlet (4) and an outlet (5) on a circumference and an opening inside, and a filter loaded in the filter case the filter comprising a cap (20) fitted to the filter case, a shaft (11) extending from a bottom of the cap, and an extension comprising a continuous solid walled structure extending from a distal end of the shaft the extension disposed to confront the opening to filter particles in water passing through the filter case, the extension having a protrusion protruding from a side of the extension opposite the cap (fig. 1). Beier does not teach a cabinet, a tub in the cabinet, a drum rotatably installed in the tub and the filter assembly in a cabinet. Lee teaches a washing machine with a cabinet, a tub provided in the cabinet, a drum rotatably installed in the tub and a filter assembly provided in the cabinet to filter water discharged from the tub (col. 1, lines 24-30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the filter of Beier and the washing machine of Lee in order to remove impurities contained in the liquid discharged from the tub (col. 1, lines 54-56 Lee).

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Regarding claims 15-21, 33 and 34, Beier further teaches a circumferential cross-section of the protrusion is a closed curve (fig. 2); the protrusion has a ring type circumferential cross-section (fig. 2); the extension has a funnel figure (fig. 2); a diameter of an end portion of the extension is equal to or greater than a diameter of the opening (fig. 1); the filter case is cylindrical (fig. 1); the inlet is provided to the circumference of the filter case in a tangential direction (fig. 1); the filter case comprises a tube (1) having the inlet and the outlet on the circumference, a partition wall provided in the tube to partition an internal space of the tube into first and second chambers communicating with the inlet and the outlet, respectively, and the opening perforating the partition wall (fig. 1); the protrusion extends from the extension in a direction opposite the cap; and a largest diameter portion of the extension surrounds the protrusion (fig. 1).

Regarding claim 40, Beier further teaches the protrusion extends directly from an inner surface of the funnel shaped extension (fig. 2).

Response to Arguments

5. Applicant's arguments filed 6/6/07 have been fully considered but they are not persuasive.

Regarding claim 6, the applicant has argued that the second disc (19) of Yoo is not solid walled. The disc does comprise an annular continuous solid walled structure; the presence of a hole in the middle does not preclude the rest of the structure from having a solid wall. The disc (20) extends from the bar (21), which extends from the disc (19); therefore the disc (20) also extends from the disc (19).

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Regarding claims 1 and 22, the applicant has argued that the extension of Beier is not funnel/conical shaped; the extension is conical shaped as can be seen in the figure identified in the above office action. The extension is also solid walled from its outer radial edge to its inner radial edge. The protrusion as identified in the figure in the office action above also extends from the extension. The extension is also positioned immediately adjacent to the opening in the case as seen in figure 1.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin Kurtz whose telephone number is 571-272-


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8211. The examiner can normally be reached on Monday through Friday 8:00am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Benjamin Kurtz
Patent Examiner 1723
7/12/07


KRISHNAN MENON
PRIMARY EXAMINER 7/12/07